napatech

Case study: Fujitsu tackles the 200G challenge

FUJITSU

Challenge

With the increasing number of telecom carriers migrating to 100G solutions and the persistent emergence of smart devices and cloud services, there is a growing need to enhance network performance. But monitoring and analyzing 200G of communication brings certain challenges.

A common approach is to combine 100G upstream and downstream links via devices such as smart taps, but this typically requires a comprehensive system of multiple 10G lines connected to a range of devices. This escalates both complexity and cost.

Solution

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. In addressing the 200G challenge, Fujitsu has developed the Proactnes II QM 200G network quality monitoring & analysis solution. By adapting Napatech's FPGA-driven 100G SmartNICs, this solution can directly analyze 2 x 100G lines with just a single server.

By connecting two SmartNICs, upstream and downstream data can be intelligently merged, and specific information can be directed to the right CPU core. This greatly lowers the processing load on the CPUs and unburdens the application to efficiently analyze the target data.

As the solution is able to analyze network and application quality in real time while monitoring communication packets at 200G, it can instantly detect any deterioration of network quality and accurately identify a problem area. By analyzing the communication behavior without dropping a single packet, it is possible to determine whether a degradation in service quality, such as a response delay, is caused by the network or an issue in the application.

Benefits

Powered by Napatech's FPGA-based SmartNICs, the Proactnes II QM Solution is optimized to capture network traffic at full line-rate, ensuring that the data provided for analyzing the network quality will be completely accurate.

Challenge

With the increasing number of telecom carriers migrating to 100G solutions, there is a growing need to enhance network performance. But managing 200G of data brings a number of challenges. The common approach typically requires a wider system of 10G lines – which escalates both complexity and cost.

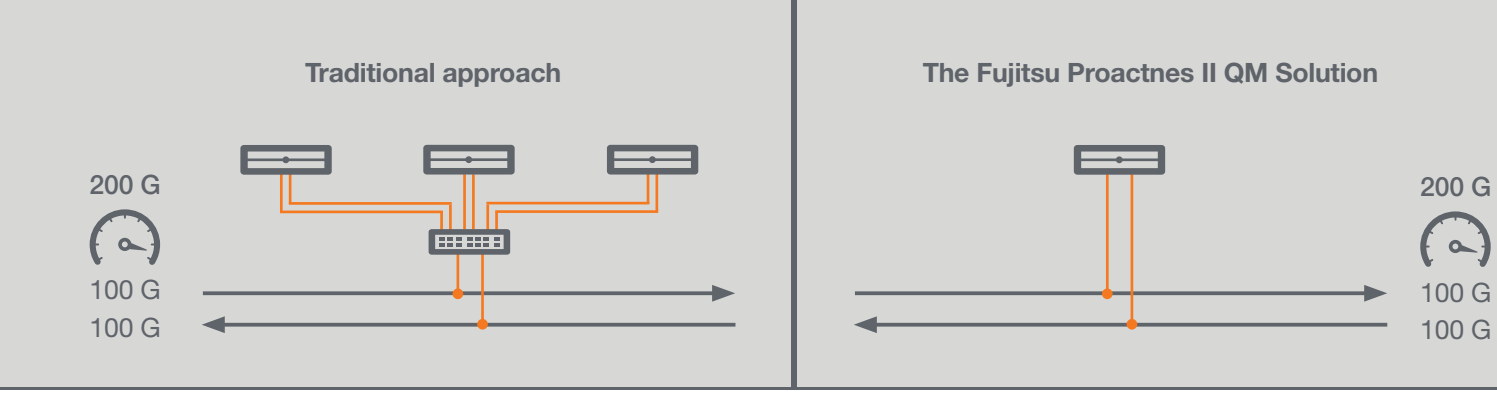
Solution

In addressing this challenge, Fujitsu has developed the Proactnes II QM Solution. By adapting two 100G Napatech SmartNICs, this solution can directly analyze 2 x 100G lines with just a single server.

Benefits

Increased analytical efficiency and reduced costs achieved through:

- 100% packet capture
- Optimized performance
- Intelligent CPU distribution
- 100G compatibility



Optimized memory performance

With Napatech SmartNICs, the Proactnes II QM Solution not only captures data at high speeds, it also delivers data efficiently to the application by ensuring that the relevant data is batched and sent directly to the cache memory of the server CPUs. This ensures that the data is available in the fastest memory. And since all the data in the cache is relevant, it allows the CPU to pre-fetch data to further expedite processing.

Intelligent multi-CPU distribution

The Proactnes II QM Solution uses all the processing resources available in the server, creating a need for smarter workload balance amongst the available CPU cores. Napatech SmartNICs can identify and filter the data before directing it to the relevant CPU cores.

Efficient data distribution is enabled up to 128 cores, allowing massive parallel processing of large amounts of data.

100G compatibility

By enabling parallel processing with reduced CPU load, the Napatech SmartNICs facilitate analytical processing performance of 2 x 100G lines without changing the software architecture.

SmartNIC highlights

- Based on reconfigurable FPGA technology
- 100% lossless capture
- Nanosecond precision timestamp
- Supports multiple clock synchronization schemes
- Enables persistent analysis at speeds of 200G
- Greatly improves application performance

Napatech

Napatech helps companies to reimagine their business, by bringing hyper-scale computing benefits to IT organizations of every size.

We enhance open and standard virtualized servers to boost innovation and release valuable computing resources that improve services and increase revenue.

Our Reconfigurable Computing Platform™ is based on a broad set of FPGA software for leading IT compute, network and security applications that are supported on a wide array of FPGA hardware designs.

Find out more at:
www.napatech.com

Find more case studies at:
www.napatech.com/resources/case-studies

DN-1036 Rev. 2

EUROPE, MIDDLE EAST AND AFRICA
Napatech A/S
Copenhagen, Denmark

Tel. +45 4596 1500
info@napatech.com
www.napatech.com

NORTH AMERICA
Napatech inc.
Boston, Massachusetts
Los Altos, California
Washington D.C.

Tel. +1 888 318 8288

info@napatech.com
www.napatech.com

APAC
Napatech China/South Asia
Taipei City, Taiwan
Tel. +886 2 28164533 Ext. 319

Napatech Japan K.K.
Tokyo, Japan
Tel. +81 3 5326 3374

ntapacsales@napatech.com
www.napatech.com